

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-8 (canceled).

Claim 9 (previously amended): A projection-type display device, comprising:

a reflection-type image-forming means for spatially modulating and reflecting illumination light of a predetermined plane polarization to emit an optical image with a plane polarization rotated with respect to the plane polarization of the illumination light;

a projection optical system for projecting the optical image;

a light source for emitting light including the illumination light;

and

a plane polarization conversion means for converting the emitted light from the light source to illumination light of a plane polarization corresponding to the plane polarization of the light incident on the reflection-type image-forming means;

a polarization beam splitter for emitting the illumination light directed from the light source through the plane polarization conversion means toward the reflection-type image-forming means in line with an axis and emitting the optical image redirected from the reflection-type image-forming means in line with the axis to the projection optical system; and

a polarization separation element forming a plate on an incident facet of the illumination light of the polarization beam splitter for selectively transmitting illumination light of a plane polarization corresponding to the plane polarization of the light incident on the reflection-type image-forming means and selectively reflecting the component of the plane polarization

orthogonal to that plane polarization arranged between the light source and the polarization beam splitter.

Claim 10 (canceled).

Claim 11 (previously amended): A projection-type display device, comprising:

a reflection-type image-forming means for spatially modulating and reflecting illumination light of a predetermined plane polarization to emit an optical image with a plane polarization rotated with respect to the plane polarization of the illumination light;

a projection optical system for projecting the optical image;

a light source for emitting light including the illumination light;

a plane polarization conversion means for converting the emitted light from the light source to illumination light of a plane polarization corresponding to the plane polarization of the light incident on the reflection-type image-forming means;

a polarization beam splitter for emitting the illumination light directed from the light source through the plane polarization conversion means toward the reflection-type image-forming means in line with an axis and emitting the optical image redirected from the reflection-type image-forming means in line with the axis to the projection optical system; and

a polarization separation element forming a plate on an emission facet of the optical image of the polarization beam splitter for selectively transmitting incident light of a plane polarization corresponding to the plane polarization of the optical image and selectively reflecting the component of the plane polarization orthogonal to that plane polarization arranged between the projection optical system and the polarization beam splitter.

Claim 12 (canceled).

Claim 13 (previously amended): A projection-type display device, comprising:

a reflection-type image-forming means for spatially modulating and reflecting illumination light of a predetermined plane polarization to emit an optical image with a plane polarization rotated with respect to the plane polarization of the illumination light;

a projection optical system for projecting the optical image;

a light source for emitting light including the illumination light;

a plane polarization conversion means for converting the emitted light from the light source to illumination light of a plane polarization corresponding to the plane polarization of the light incident on the reflection-type image-forming means;

a polarization beam splitter for emitting the illumination light directed from the light source through the plane polarization conversion means toward the reflection-type image-forming means in line with an axis and emitting the optical image redirected from the reflection-type image-forming means in line with the axis to the projection optical system; and

a polarization separation element forming a plate on an emission facet of the optical image of the polarization beam splitter for selectively transmitting incident light of a plane polarization corresponding to the plane polarization of the optical image and selectively reflecting the component of the plane polarization orthogonal to that plane polarization arranged between the projection optical system and the polarization beam splitter.

Claim 14 (canceled).

Claim 15 (original): A projection-type display device as set forth in claim 13, wherein said second polarization separation element is formed on an emission facet of the optical image of said light separating means.

Claim 16 (previously amended): A projection-type display device as set forth in claim 13, wherein

said first polarization separation element is formed on an incident facet of the illumination light of said light separating means; and

said second polarization separation element is formed on an emission facet of the optical image of said light separating means.

Claims 17-36 (canceled).

Claim 37 (currently amended): A projection-type display device, comprising:

a reflection-type image-forming means for spatially modulating and reflecting illumination light of a predetermined plane polarization to emit an optical image with a plane polarization rotated with respect to the plane polarization of the illumination light;

a projection optical system for projecting the optical image;

a light source for emitting light including the illumination light;

a polarization beam splitter for emitting the illumination light from the light source toward the reflection-type image-forming means and emitting the optical image from the reflection-type image-forming means to the projection optical system; and

said polarization beam splitter being formed by a member satisfying the following relationship:

wherein:

$$A = K \cdot \alpha \cdot E \cdot \frac{C_p}{\rho} \int_{\lambda_2}^{\lambda_1} (1 - T) d\lambda$$

$$\underline{A = 3.71 \times 10^2}$$

K: photoelasticity constant of said member (nm/mm·mm²/N),

α : linear expansion coefficient of said member (10⁻⁶/K),

E: Young's modulus of said member (10³N/mm²),

λ : wavelength of the illumination light (nm),

T: internal transmittance of said member at the wavelength λ ,

ρ : specific gravity of said member (g/cm³), and

Cp: specific heat of said member J/g·k),

the integration range in Equation being a range of the light absorption wavelength band of the member.

Claim 38 (currently amended): A projection-type display device as set forth in claim 37, further comprising at least one of a polarization separation element and ~~or~~ a plane polarization conversion means between the polarization beam splitter and the light source, said polarization separation means selectively transmitting illumination light of a plane polarization corresponding to the plane polarization of the light incident on the reflection-type image-forming means, said plane polarization conversion means converting the emitted light from the light source to illumination light of a plane polarization corresponding to the plane polarization of the light incident on the reflection-type image-forming means.